



Europäisches Patentamt  
European Patent Office  
Office européen des brevets



Publication number:

**0 605 024 A3**

(12)

## EUROPEAN PATENT APPLICATION

(21) Application number: 93203089.3

(51) Int. Cl.<sup>6</sup>: **A61K 9/51, A61K 9/14,  
A61K 49/04**

(22) Date of filing: 04.11.93

(30) Priority: 16.12.92 US 991639

(43) Date of publication of application:  
06.07.94 Bulletin 94/27

(84) Designated Contracting States:  
**AT BE CH DE DK ES FR GB GR IE IT LI LU MC  
NL PT SE**

(88) Date of deferred publication of the search report:  
12.04.95 Bulletin 95/15

(71) Applicant: **EASTMAN KODAK COMPANY**  
343 State Street  
Rochester,  
New York 14650 (US)

(72) Inventor: Hollister, Kenneth R., c/o **STERLING  
WINTHROP INC.**  
Patent Department,  
90 Park Avenue  
New York,  
New York 10016 (US)  
Inventor: Ladd, David L., c/o **STERLING  
WINTHROP INC.**  
Patent Department,  
90 Park Avenue  
New York,  
New York 10016 (US)  
Inventor: McIntire, Gregory L., c/o **STERLING**

**WINTHROP INC.**  
Patent Department,  
90 Park Avenue  
New York,  
New York 10016 (US)  
Inventor: Na, George C., c/o **STERLING  
WINTHROP INC.**  
Patent Department,  
90 Park Avenue  
New York,  
New York 10016 (US)  
Inventor: Rajagopalan, Natarajan, c/o  
**STERLING WINTHROP INC.**  
Patent Department,  
90 Park Avenue  
New York,  
New York 10016 (US)  
Inventor: Yuan, Barbara O-Ching, c/o  
**STERLING WINTHROP INC.**  
Patent Department,  
90 Park Avenue  
New York,  
New York 10016 (US)

(74) Representative: Halle, Helen Cynthia et al  
**Kodak Limited**  
Patent Department  
Headstone Drive  
Harrow,  
Middlesex HA1 4TY (GB)

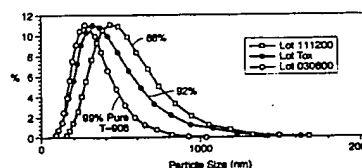
**EP 0 605 024 A3**

(54) Use of purified surface modifiers to prevent particle aggregation during sterilization.

(57) A composition comprising nanoparticles having a purified polymeric surfactant as a surface modifier adsorbed on the surface thereof and a cloud point modifier associated therewith, which cloud point modifier is present in an amount sufficient to increase the cloud point of the surface modifier, and a method of making such nanoparticles is described. Preferred purified polymeric surfactants are purified polyalkyleneoxide substituted ethylenediamine surfactants and a preferred cloud point modifier is poly-

ethylene glycol.

**FIG. 4**





European Patent  
Office

## EUROPEAN SEARCH REPORT

Application Number  
EP 93 20 3089

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
E	EP-A-0 601 619 (STERLING WINTHROP INC.) * the whole document * ---	1-9	A61K9/51 A61K9/14 A61K49/04
E	EP-A-0 601 618 (STERLING WINTHROP INC.) * the whole document * ---	1-4,6-9	
E	US-A-5 298 262 (G. C. NA ET AL) * the whole document * ---	1-4,6-9	
X	EP-A-0 012 523 (AMERICAN HOME PRODUCTS CORPORATION) * claims 1-13 * ---	1,2,7	
X	WO-A-90 15593 (YTKEMISKA INSTITUTET)  * claims 1-10 * * page 3, line 29 - page 4, line 7 * * page 7, line 17 - page 8, line 35 * ---	1,2,4,5,7	
A,D	EP-A-0 498 482 (STERLING WINTHROP INC.) * claims 1-16 * * page 6, line 54 - page 7, line 38 * ---	1-9	TECHNICAL FIELDS SEARCHED (Int.Cl.5)
A	JOURNAL OF MICROENCAPSULATION, vol.9, no.1, March 1992, LONDON, GB pages 19 - 28 S. D. TRÖSTER ET AL 'Influence of the surface properties of low contact angle surfactants on the body distribution of 14C-poly(methyl methacrylate) nanoparticles' * abstract * * page 26, line 26 - line 33 * -----	1-9	A61K
The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 30 January 1995	Examiner Siatou, E
<b>CATEGORY OF CITED DOCUMENTS</b> X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document  T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document			

EPO FORM 1503 01.82 (P06C01)